

CLAIMS

1. A solid-state image pickup device comprising:
a photosensor section provided in a substrate as a section including a first photosensor and a second photosensor for receiving a light beam with a wavelength smaller than the wavelength of a light beam received by said first photosensor;

an electric-charge transfer section provided beneath said second photosensor in said substrate; and

a read gate provided beneath said first photosensor in said substrate as a gate for transporting electric charge obtained as a result of a photoelectric conversion process carried out by said first photosensor to said electric-charge transfer section.

2. A solid-state image pickup device according to claim 1, wherein said first photosensor receives a light beam of the red or green color and said second photosensor receives a light beam of the blue color.

3. A solid-state image pickup device according to claim 1, wherein said first photosensor receives a light beam of the red color and said second photosensor receives a light beam of the green color.

4. A solid-state image pickup device according to claim 1, wherein said first photosensor and said second

photosensor are provided at adjacent locations separated away from each other by a potential barrier section.

5. A solid-state image pickup device comprising:

a photosensor section provided in a substrate as a section including a first photosensor and a second photosensor for receiving a light beam with a wavelength smaller than the wavelength of a light beam received by said first photosensor;

a first electric-charge transfer section provided beneath said first photosensor in said substrate;

a second electric-charge transfer section provided beneath said second photosensor in said substrate;

a first read gate provided in a side portion of said first photosensor in said substrate as a gate for transporting electric charge obtained as a result of a photoelectric conversion process carried out by said first photosensor to said first electric-charge transfer section;

a second read gate provided in a side portion of said second photosensor in said substrate as a gate for transporting electric charge obtained as a result of a photoelectric conversion process carried out by said second photosensor to said second electric-charge transfer section; and

a transfer gate provided between said first electric-charge transfer section and said second electric-charge transfer section in said substrate as a gate for transferring electric charge accumulated in said first electric-charge transfer section to said second electric-charge transfer section.

6. A solid-state image pickup device according to claim 5, wherein said first photosensor receives a light beam of the red or green color and said second photosensor receives a light beam of the blue color.

7. A solid-state image pickup device according to claim 5, wherein said first photosensor receives a light beam of the red color and said second photosensor receives a light beam of the green color.

8. A solid-state image pickup device according to claim 5, wherein said first photosensor and said second photosensor are provided at adjacent locations separated away from each other by a potential barrier section.

9. An electric-charge transfer method provided for a solid-state image pickup device comprising a photosensor section provided in a substrate as a section including a first photosensor and a second photosensor for receiving a light beam with a wavelength smaller than the wavelength of a light beam received by said first

photosensor,

wherein a read gate provided beneath said first photosensor in said substrate transports electric charge obtained as a result of a photoelectric conversion process carried out by said first photosensor to an electric-charge transfer section provided beneath said second photosensor in said substrate.

10. An electric-charge transfer method provided for a solid-state image pickup device in accordance with claim 9, wherein said first photosensor receives a light beam of the red or green color and said second photosensor receives a light beam of the blue color.

11. An electric-charge transfer method provided for a solid-state image pickup device in accordance with claim 9, wherein said first photosensor receives a light beam of the red color and said second photosensor receives a light beam of the green color.

12. An electric-charge transfer method provided for a solid-state image pickup device in accordance with claim 9, wherein said first photosensor and said second photosensor are provided at adjacent locations separated away from each other by a potential barrier section.

13. An electric-charge transfer method provided for a solid-state image pickup device comprising a

photosensor section provided in a substrate as a section including a first photosensor and a second photosensor for receiving a light beam with a wavelength smaller than the wavelength of a light beam received by said first photosensor, wherein:

a read gate provided in a side portion of said first photosensor in said substrate transports electric charge obtained as a result of a photoelectric conversion process carried out by said first photosensor to a first electric-charge transfer section provided beneath said first photosensor in said substrate; and

a transfer gate further transfers said electric charge to a second electric-charge transfer section provided beneath said second photosensor in said substrate.

14. An electric-charge transfer method provided for a solid-state image pickup device in accordance with claim 13, wherein said first photosensor receives a light beam of the red or green color and said second photosensor receives a light beam of the blue color.

15. An electric-charge transfer method provided for a solid-state image pickup device in accordance with claim 13, wherein said first photosensor receives a light beam of the red color and said second photosensor

receives a light beam of the green color.

16. An electric-charge transfer method provided for a solid-state image pickup device in accordance with claim 13, wherein said first photosensor and said second photosensor are provided at adjacent locations separated away from each other by a potential barrier section.

17. A method of fabricating a solid-state image pickup device, said method comprising the steps of creating:

a photosensor section in a substrate as a section including a first photosensor and a second photosensor for receiving a light beam with a wavelength smaller than the wavelength of a light beam received by said first photosensor;

an electric-charge transfer section beneath said second photosensor in said substrate; and

a read gate beneath said first photosensor in said substrate as a gate for transporting electric charge obtained as a result of a photoelectric conversion process carried out by said first photosensor to said electric-charge transfer section.

18. A method of fabricating a solid-state image pickup device, said method comprising the steps of creating:

a photosensor section in a substrate as a section including a first photosensor and a second photosensor for receiving a light beam with a wavelength smaller than the wavelength of a light beam received by said first photosensor;

a first electric-charge transfer section beneath said first photosensor in said substrate;

a second electric-charge transfer section beneath said second photosensor in said substrate;

a first read gate provided in a side portion of said first photosensor in said substrate as a gate for transporting electric charge obtained as a result of a photoelectric conversion process carried out by said first photosensor to said first electric-charge transfer section;

a second read gate provided in a side portion of said second photosensor in said substrate as a gate for transporting electric charge obtained as a result of a photoelectric conversion process carried out by said second photosensor to said second electric-charge transfer section; and

a transfer gate between said first electric-charge transfer section and said second electric-charge transfer section in said substrate as a gate for transferring

electric charge accumulated in said first electric-charge transfer section to said second electric-charge transfer section.